



JACKIE COLE
PROJECT MANAGER

December 20, 2018

Mr. Stephen Wolfe
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 5
25063 Center Ridge Road
Westlake, Ohio 44145

Subject: Oil Pollution Act Removal Report, Revision 2
Warren Steel Holdings Removal Site
EPA Contract No.: EP-S5-13-01
Technical Direction Document No.: S05-0004-1807-203
Document Tracking No.: 2517B

Dear Mr. Wolfe:

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) is submitting this report, for your review and comment, that summarizes the Oil Pollution Act (OPA) removal conducted at the Warren Steel Holdings Site located at 4000 Mahoning Avenue in Warren, Trumbull County, Ohio, between August 27, 2018 and September 27, 2018. Tetra Tech addressed your comments on Revision 1 of the report received on December 14, 2018.

If you have any questions regarding this report, please contact me at **NON RESPONSIVE** or via e-mail at Jackie.cole@tetrattech.com.

Respectfully,

Jackie Cole
Project Manager

Enclosure

cc: Sam Chummar, EPA Project Officer (letter only)
Kevin Scott, Tetra Tech Program Manager
TDD File

**OIL POLLUTION ACT REMOVAL REPORT
WARREN STEEL HOLDINGS REMOVAL SITE
WARREN, TRUMBULL COUNTY, OHIO**

Revision 2

Prepared for

U.S. Environmental Protection Agency
Emergency Response Branch
Region 5
25063 Center Ridge Road
Westlake, Ohio 44145



Submitted by

Tetra Tech, Inc.
6777 Engle Road, Suite L
Middleburg Heights, Ohio 44130

EPA Contract No.: EP-S5-13-01

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December 20, 2018

Prepared by

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Approved by

Kristine Schnoes
START QC Reviewer

CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
1.1 SITE LOCATION.....	1
1.2 SITE HISTORY	2
2.0 REMOVAL ACTION ACTIVITIES.....	5
2.1 DOCUMENTATION	5
2.2 OIL DRAINING, DISMANTLING, AND REMOVAL.....	5
3.0 REMOVAL SUMMARY	7
4.0 REFERENCES	8

Appendix

A	FIGURES
	1 – SITE LOCATION MAP
	2 – SITE LAYOUT MAP
B	PHOTOGRAPHIC DOCUMENTATION LOG
C	START FIELD NOTES
D	DISPOSAL DOCUMENTATION
E	ENVIRONMENTALLY-PREFERRED PRACTICES

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked Tetra Tech, Inc. (Tetra Tech) to provide support during an Oil Pollution Act (OPA) removal action at the Warren Steel Holdings Site (the site) located in Warren, Trumbull County, Ohio. This work was assigned under Superfund Technical Assessment and Response Team (START) Contract No. EP-S5-13-01, Technical Direction Document (TDD) No. S05-0004-1807-203.

As part of the initial Warren Steel Holdings Comprehensive Environmental Resource, Compensation, and Liability Act (CERCLA) time-critical removal action, START prepared a site-specific Emergency Contingency Plan and the Emergency and Rapid Response Services (ERRS) contractor, Environmental Restoration, LLC (ER), submitted a Health and Safety Plan (HASP) (Tetra Tech 2018, ER 2018). Following approval by EPA, work during the subsequent OPA removal action was performed in accordance with these plans, along with the START Quality Assurance Project Plan (QAPP), Revision 3, dated June 28, 2016 (Tetra Tech 2016).

This removal report is organized into the following sections:

- 1.0 Introduction – describes the objectives and scope of the removal action and describes the site and its history.
- 2.0 Removal Action Activities – describes the activities that occurred during the removal action, including oversight and documentation and waste draining, dismantling, and removal.
- 3.0 Removal Summary – summarizes the time-critical removal
- 4.0 References – lists references used within the removal report.

In addition, this removal report contains five appendices. Appendix A provides figures for this report. Appendix B provides representative photographs of the site conditions and removal activities conducted at the site. Appendix C provides field notes recorded by START personnel. Appendix D provides waste disposal documentation. Information on environmentally-preferred practices used during this project are included in Appendix E.

1.1 SITE LOCATION

The site is located at 4000 Mahoning Avenue in Warren, Trumbull County, Ohio. Figure 1 in Appendix A illustrates the location of the site on the U.S. Geological Survey (USGS) 7-Minute Topographic Quadrangle for Trumbull County, Ohio. The geographic coordinates at the center of the site are 41°16'19.3" north

latitude and 80°51'4.30" west longitude. The site covers approximately 400 acres and is located in a mixed residential and commercial area.

The main facility is bounded to the north by the Warren Outerbelt; to the east by Mahoning Avenue; to the south by North River Road and the Mahoning River; and to the west by residential properties. Ohio Star Forge lies within the site boundary, in the northwestern portion of the site, and shares an address and entrance driveway with the site. An electrical substation, as well as several associated small buildings, is located to the south of the main facility, immediately south of North River Road. In this area, there are also two water treatment buildings and unmaintained settling ponds associated with the main facility. At the time of the initial site assessment, abandoned transformers were scattered throughout the property south of North River Road. The substation and surrounding property contained approximately 75 oil-filled transformers and 253 oil-filled capacitors. The substation is sloped towards the Mahoning River, approximately 200 feet south of the substation. Topography across the site slopes gradually to the west. The site's elevation is approximately 913 feet above mean sea level.

The outer fences of the main facility are largely intact; however, the shared entrance brings traffic from other businesses through the site, without barriers, to the waste locations. Both humans and wildlife can access the abandoned buildings and the waste inside these buildings. Additionally, graffiti has been observed within the west warehouse buildings. Various debris piles are present throughout much of the site.

The electrical substation and water treatment plant area is fenced, gated, and locked; however, evidence of trespassing, including cut locks, has been observed at the site. The substation is sloped towards the Mahoning River, approximately 200 feet away. There are settling ponds located at the Mahoning River; however, they are not maintained. There are several small buildings associated with the electrical substation.

1.2 SITE HISTORY

Warren Steel Holdings, LLC (WSH) is a closed steel manufacturing facility that produced various solid steel billets from scrap steel. WSH operated at the site until January 2016, when operations ceased. Information reviewed indicates that the Ohio Environmental Protection Agency (Ohio EPA) and EPA have conducted several inspections at the site since 2007. A final inspection was conducted in January of 2016, in which several "Notices of Violation" were issued by Ohio EPA. WSH failed to address some of these violations, prior to ceasing operation in January 2016. Several areas of hazardous waste, universal waste, polychlorinated biphenyl (PCB)-contaminated oil, asbestos, water and wastewater treatment chemicals,

electric arc furnace (Resource Conservation and Recovery Act [RCRA] hazardous waste code K061) dust, non-hazardous slag, lime, ignitable drums, oil-filled transformers, and miscellaneous unknown materials are still present on site.

Ohio Star Forge owns approximately 5 acres of land on the northwestern portion of the site and is currently an operating facility. The property owned by Ohio Star Forge is excluded from the project scope. The Copperweld Steel Company operated at the site from the 1940s until 2001 when much of the property was disassembled and sold at auction. Warren Steel Holdings purchased the property and assets and operated the facility until November 2015 when it began shutting the facility down. There are numerous abandoned buildings on the site. The abandoned buildings are in various states of deterioration. Most production equipment has been removed from the buildings, but some still contain various abandoned waste. Additionally, several buildings contain old equipment pits with unknown liquids, including at least one with PCB-containing oil.

On February 8, 2016, Ohio EPA requested assistance from EPA in conducting a CERCLA time-critical removal action at the site (Ohio EPA 2016). EPA, ERRS, and START mobilized to the site on April 24, 2018 to conduct removal activities.

Between June 11 and June 15, 2018, under the CERCLA time-critical removal action, ERRS and their subcontractor (SDMyers, LLC) inspected all the on-site transformers, a total of 126 units, and sampled for oil content and PCB analysis, if possible. The analytical results indicated that seven transformers, from the abandoned electrical substation located south of North River Road, had PCB concentrations greater than 50 parts per million (ppm). These seven transformers at the electrical substation that were above 50 ppm PCBs were addressed under the concurrent CERCLA removal action.

There are approximately 75 transformers and 253 capacitors located in the abandoned electrical substation (or surrounding property) approximately 200 feet from the Mahoning River (see Figure 2 in Appendix A). The transformers and capacitors were in average to poor condition, with apparent rusting and surface damage (denting) evident on the majority of the units. Paint on the transformers was in poor condition (flaking and/or missing), causing the units to be susceptible to rusting. Settling lagoons located between the substation and the Mahoning River are not maintained and are inoperative.

Additionally, during the CERCLA removal action, START assessed an abandoned aboveground storage tank, located at the site, that contained approximately 3,000 gallons of oil. Oil was sampled and confirmed

to be oil uncontaminated with PCBs. The tank is located immediately north of an outfall to the Mahoning River, on the north side of North River Road (see Figure 2 in Appendix A).

Due to the condition of the tank, transformers, and capacitors, and their direct proximity to the Mahoning River, EPA submitted an OPA Project Plan for funding to remove the immediate threat of an oil release to the river (EPA 2018). On July 20, 2018, the OPA 90 Project Plan was approved.

2.0 REMOVAL ACTION ACTIVITIES

This section discusses the OPA removal action conducted at the site from August 27, 2018 to September 27, 2018. EPA On-Scene Coordinator (OSC) Stephen Wolfe was the site contact. The START contractor was Tetra Tech. The ERRS contractor was ER. START completed written and photographic documentation of site conditions and activities. ERRS and their subcontractor (Emerald Transformer) prepared waste for removal and arranged for off-site transportation and disposal. Removal activities were conducted under the direction of the on-site EPA OSC.

Level D (steel-toe boots, hardhat, and reflective vest) personal protective equipment (PPE) was donned during all removal activities, as specified in the WSH CERCLA removal action site-specific HASP (ER 2018). The general chronological order of activities included oil tank and transformer draining; capacitor and transformer dismantling and removal; and off-site transportation and disposal.

2.1 DOCUMENTATION

Throughout the OPA Removal Action, START documented the work conducted by the ERRS contractor with written and photographic documentation of site conditions and activities. ERRS and their subcontractor (Emerald Transformer) prepared oil for removal and arranged for off-site transportation and disposal.

In the field logbook, START personnel recorded daily weather conditions, ERRS contractor activities, and oil disposal events. Representative site photographs are presented in Appendix B, and START's field notes are provided in Appendix C.

2.2 OIL DRAINING, DISMANTLING, AND REMOVAL

On August 27, 2018, an ERRS subcontractor (Safety-Kleen Systems) collected 3,000 gallons of petroleum material from the oil tank north of North River Road (see Figure 2 in Appendix A), near an outfall to the Mahoning River. A vacuum truck was used to containerize the oil for off-site transport and disposal at the subcontractor's facility.

Between September 17 and 27, 2018, the ERRS subcontractor, Emerald Transformer, drained and dismantled transformers, located on the abandoned site electrical substation, that contained oil with a PCB concentration less than 50 ppm. Transformers were dismantled and removed, as able; large transformers unable to be removed were drained of oil and left in place. A vacuum truck was used to containerize the drained transformer oil for transport to the subcontractor's facility for treatment and eventual recycling.

Transformer carcasses were transported off-site and recycled. Additionally, 253 oil-filled capacitors were dismantled and disposed of by incineration.

The total volume of each waste stream and disposal method are presented below:

Table 1
Warren Steel Holdings OPA Removal Volumes

Waste Stream	Medium	Quantity	Units	Disposal Method
Petroleum Material	Liquid	3,000	Gallons	Disposal
Transformer Oil (<50 ppm PCBs)	Liquid	47,000	Gallons	Treatment and Recycling
Oil Filled Capacitors	Solid	253	Units	Incineration and Landfill
Metal (Transformers)	Solid	90	Tons	Recycling

Notes:

< = Less than

PCBs = Polychlorinated biphenyls

ppm = Parts per million

Bill of ladings and disposal documentation are provided in Appendix D.

3.0 REMOVAL SUMMARY

The following is a summary of the removal activities completed intermittently from August 27 through September 27, 2018:

- Transformers in an abandoned electrical substation, located less than 200 feet from the Mahoning River, were drained, dismantled, and removed from the facility. In total, approximately 47,000 gallons of oil and 90 tons of metal were removed from the site, to be treated and recycled.
- Oil-filled capacitors were dismantled and removed from the abandoned electrical substation for disposal.
- Petroleum material was drained from a tank located near an outfall to the Mahoning River and removed for disposal.

4.0 REFERENCES

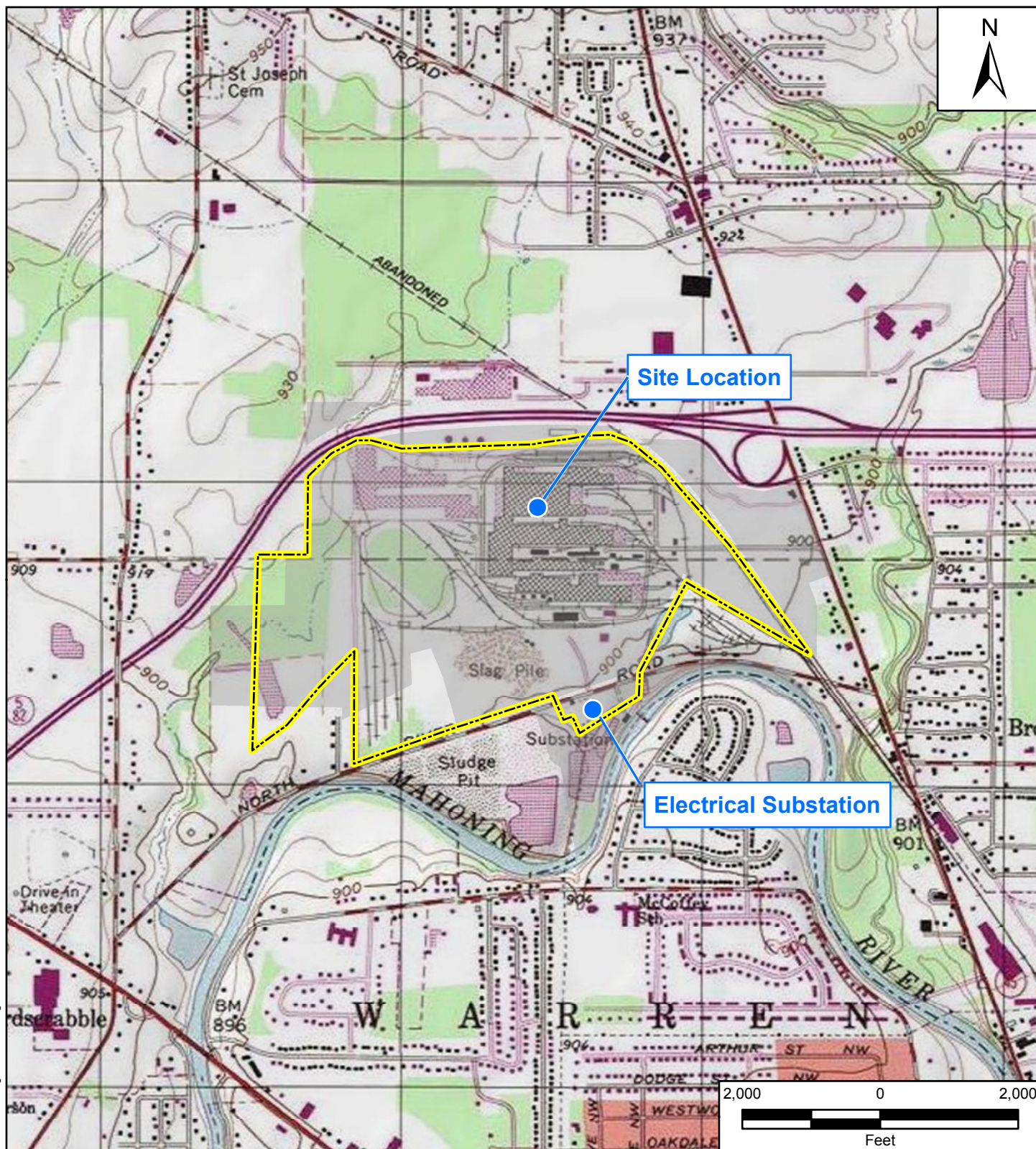
- Environmental Restoration, LLC (ER). 2018. "Site Health and Safety Plan." Prepared for EPA under Contract No. EP-S4-16-02. April 4.
- Ohio Environmental Protection Agency (Ohio EPA). 2016. "Time Critical Removal Request – Warren Steel Holdings." February 8.
- Tetra Tech, Inc. (Tetra Tech). 2016. "Quality Assurance Project Plan." Prepared for EPA under Contract No. EP-S5-13-01. Revision 3. June 28.
- Tetra Tech. 2018. "Emergency Contingency Plan, Revision 2 – Warren Steel Holdings Site." Prepared for EPA under Contract N. EP-S5-13-01. April 26.
- U.S. Environmental Protection Agency (EPA). 2018. "Oil Removal Project Plan; Warren Steel Holdings (E18519), Warren, Mahoning County, Ohio." July 9.

APPENDIX A

FIGURES

- 1 – SITE LOCATION MAP
- 2 – SITE LAYOUT MAP


File Path: G:\G9026-START\Ohio\Warren Steel Holdings Site\mxd\Fig1-SiteLocation.mxd



Reference Map



Legend

 Approximate Site Boundary

Warren Steel Holdings Site
4000 Mahoning Avenue
Warren, Trumbull County, Ohio

Figure 1 Site Location Map



Prepared For: EPA

Prepared By: Tetra Tech, Inc.

Source: USGS 7.5-Minute Topographic Quadrangle Map
Warren, OH 1994

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere
Datum: WGS 1984
Units: Meter

Date Saved: 12/11/2018

EPA Contract No.: EP-S5-13-01

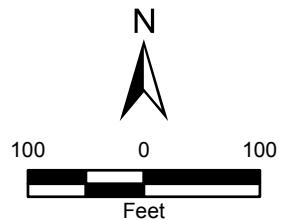
TDD No.: S05-0001-1612-007



Legend

- Approximate Site Boundary
- Electrical Substation Area

Source: ESRI World Imagery (Clarity)



Warren Steel Holdings Site
4000 Mahoning Avenue
Warren, Trumbull County, Ohio

Figure 2
Site Layout Map



Prepared For: EPA

Prepared By: Tetra Tech Inc.

APPENDIX B
PHOTOGRAPHIC DOCUMENTATION LOG



Photographic Documentation

Client: U.S. Environmental Protection Agency
Site Name: Warren Steel Holdings Removal Site
Location: Warren, Ohio

Prepared by: Jackie Cole
TDD Number: S05-0004-1807-203
Dates: April 27, 2017 to September 27, 2018

Photograph No. 1

Date: 4/27/2017

Description: Overview of the site abandoned electrical substation area, as seen during the initial Warren Steel Holdings site assessment; facing south.



Photograph No. 2

Date: 5/11/2018

Description: Abandoned oil tank near an outfall to the Mahoning River, off North River Road; facing southeast.





Photographic Documentation

Client: U.S. Environmental Protection Agency
Site Name: Warren Steel Holdings Removal Site
Location: Warren, Ohio

Prepared by: Jackie Cole
TDD Number: S05-0004-1807-203
Dates: April 27, 2017 to September 27, 2018

Photograph No. 3

Date: 9/17/2018

Description: Transport and disposal contractor draining mineral oil from a transformer; facing south.



Photograph No. 4

Date: 9/20/2018

Description: Emergency and Rapid Response Services (ERRS) subcontractors dismantling capacitors from the abandoned substation; facing west.





Photographic Documentation

Client: U.S. Environmental Protection Agency
Site Name: Warren Steel Holdings Removal Site
Location: Warren, Ohio

Prepared by: Jackie Cole
TDD Number: S05-0004-1807-203
Dates: April 27, 2017 to September 27, 2018

Photograph No. 5

Date: 9/26/2018

Description: Dismantled capacitors awaiting removal; facing northwest.



Photograph No. 7

Date: 9/27/2018

Description: ERRS subcontractors dismantling bushings from abandoned substation; facing southwest.





Photographic Documentation

Client: U.S. Environmental Protection Agency
Site Name: Warren Steel Holdings Removal Site
Location: Warren, Ohio

Prepared by: Jackie Cole
TDD Number: S05-0004-1807-203
Dates: April 27, 2017 to September 27, 2018

Photograph No. 8

Date: 9/24/2018

Description: ERRS subcontractors dismantle and stage transformers at the abandoned electrical substation; facing west.



Photograph No. 9

Date: 4/27/2017

Description: Abandoned transformers near the site electrical substation as observed during the initial site assessment; facing west.





Photographic Documentation

Client: U.S. Environmental Protection Agency
Site Name: Warren Steel Holdings Removal Site
Location: Warren, Ohio

Prepared by: Jackie Cole
TDD Number: S05-0004-1807-203
Dates: April 27, 2017 to September 27, 2018

Photograph No. 10

Date: 9/24/2018

Description: Dismantled transformers secured on disposal contractor truck for transport and disposal via recycling; facing northeast.



APPENDIX C
START FIELD NOTES

WARREN STEEL OPA
RV



Rite in the Rain®

ALL-WEATHER

FIELD

Nº 351FX

MADE IN TACOMA

— SINCE 1918 —

Rite in the Rain

— DEFYING MOTHER NATURE —

Name _____

START FIELD LOGBOOK

Logbook Tracking Number CL106Site Name WARREN STEEL HOLDINGS - OPAIssue to JACKIE COLEDate Issued 8/31/2018TDD # 103X902600045051807203

RiteintheRain.com

CONTENTS

PAGE	REFERENCE	DATE
2	Petroleum material drained from tank	8/27/18
3-4	Et draining transformers	9/17/18
5-6	Drain transformers, mobile boom lift	9/18/18
7-8	Drain transformers, clear brush	9/19/18
9-10	Begin dismantling transformers	9/20/18
11-12	Continue draining + dismantling capacitors	9/24/18
13-14	" " _____	9/25/18
14	" " _____	9/26/18
15	" " -- END OPA WORK	9/27/18

END

Logbook

9/27/18

8/27/2018 WARREN STEEL (OPA) MONDAY
0700 START Cole on-site, H+S mtg. Discuss
HASP (laborers new to site) and
scope of work. START provide oversight
- Safety-Kleen will be on-site
to vacuum oil in tanker (~3,000 gal.)
on southwestern side of property,
north of River Road

WEATHER: 72-90°F; 98% RH; wind SSW
@ 4 mph; 10% chance of rain;
30.1" Hg; mostly cloudy

0945 Safety-Kleen on-site to transfer
oil contents from tanker

1002 Begin transferring oil

1045 Oil transfer complete, Safety
Kleen - offsite w/ 3,000 gal. oil.
START complete w/ OPA - portion
of Warren Steel Removal for day

8/27/18

9/17/18 WARREN STEEL (OPA) MONDAY 3
0730 - START WILLIAMS ON-SITE. SIGN-IN AT
SECURITY CHECKPOINT. MET W/ ERS RM
ED KIERNICKI W/ ENVIRONMENTAL REST-
ORATION. DISCUSSED SCOPE OF WORK FOR
TODAY & FOLLOWING TWO WEEKS. SAFETY-
KLEEN WILL BE CONTINUOUSLY VACUUMING
PCB OIL FROM THE TRANSFORMERS SOUTH
OF N RIVER ROAD.

WEATHER 65-76°F; 86% RH; WIND SSW
@ 5-5 MPH; 70% CHANCE OF RAIN; MOSTLY
CLOUDY

*CORRECTION - EMERALD SERVICES WILL BE
CONDUCTING OIL VACUUMING.

0900 - DENIS GETZ W/ EMERALD SERVICES
ON-SITE TO DISCUSS SCOPE OF WORK. FIRST
TANKER ARRIVES ON-SITE. ERS & EMERALD
DEPART TO SOUTHERN TRANSFORMERS TO
BEGIN VACUUMING.

1015 - EMERALD BEGINS DRAINING THE FIRST
TRANSFORMER (< 50 PPM). SERIAL # TC1
SN: 20586-2. AN ESTIMATED 12,250
GALLONS. 16 PPM PCBs.

1335 - EMERALD DEPARTS W/ FIRST LOAD
OF 5,500 GALLONS OF PCB OIL FROM
TRANSFORMER TC1 (SN: 20586-2) UNDER

Rite in the Rain

9/17/18 WARREN STEEL (OPA) MONDAY
BOL. 867983. (BILL OF LADING) — WW
1415 - START WILLIAMS DEPARTS AFTER OSC
WOLFE RECOMMENDS DEPARTING. EMERALD
WILL NOT BE RETURNING FOR A SECOND ROUND
OF DRAINAGE. — WW
* BACKNOTE - 18,750 KILOGRAMS HAULED OFF.

WW
9/17/18

9/18/18 WARREN STEEL (OPA) TUESDAY 5
0700 - START WILLIAMS ONSITE. SIGN-IN
W/ ERS & DISCUSS SCOPE FOR
TODAY. EMERALD SERVICES WILL
CONTINUE TO DRAIN TRANSFORMERS
ON THE SOUTH SIDE OF N. RIVER
ROAD. — WW

WEATHER: 62-83°F; 96% RH; WIND:
SEW 0MPH; 10% CHANCE OF RAIN; DENSE
NEAVY FOG CURRENTLY — WW

0710 - EMERALD SERVICES ONSITE W/
LARGER 6,500 GALLON TONKER
TRUCK. START DRAINAGE OF
TRANSFORMER SN # C-05397-5-1.
ESTIMATED 5,933 GALLONS OF
NON-DETECT OIL. — WW

0845 - BOOM LIFT DELIVERED ONSITE FOR
ERS/EMERALD TO BEGIN DISMANTLING
CAPACITORS & SMALL TRANSFORMERS.

0905 - EMERALD DEPARTS SITE. HAULES OFF
5,500 GALLONS / 41,250 LBS / 18,750
KILOGRAMS OF NON-DETECT, NON-
HAZARDOUS TRANSFORMER OIL. DESTINED
FOR EMERALD'S TWINSBERRY FACILITY.

1120 - ERS IS INFORMED EMERALD DOES
NOT HAVE ANOTHER TANK TRUCK TO

9/18/18 WARREN STEEL (OPA) TUESDAY

(CONT) - RETURN W/ TODAY. NO FURTHER DRAINING WILL TAKE PLACE TODAY.

1400 - EMERALD ACTUALLY DOES RETURN. ^{ww}
HOOKED UP TO TRANSFORMER 3-T TC-3
SN# C-03814-5-1; 5,945
GALLONS OF N.D. OIL (ESTIMATED)

1540 EMERALD DEPARTS SITE. HAULS OFF
18,750 KILOGRAMS OF NON-DETECT,
NON-HAZARDOUS TRANSFORMER (MINERAL)
OIL, UNDER B.O.L. 867585, FOR
TWINSBURGH, OH. ^{ww}

1600 - FINISHED FOR THE DAY ALL PERSONNEL OFFSITE.

^{ww}
9/18/18

9/19/18 WARREN STEEL (OPA) WEDNESDAY

0700 - START WILLIAMS ONSITE, OSC WOLFE &
ERES RM ONSITE. SIGN-IN W/ERES
& DISCUSS SCOPE OF WORK TODAY,
WHICH WILL CONSIST OF CONTINUING
TO DRAIN OIL FROM TRANSFORMERS
& POSSIBLY STARTING TO DISMANTLE
TRANSFORMERS IF EMERALD HAS A
CREW SENT TO THE SITE ^{ww}

^{ww} WEATHER: 58-81°F; 97% RH; WIND
WNW @ 0 MPH; 0% CHANCE OF RAIN;
29.98" Hg; PARTLY CLOUDY ^{ww}

0740 - STERICYCLE ARRIVES ONSITE TO
HAUL OUT 4, 5-GALON BUCKETS
OF MILTI CARTRIDGES UNDER
MANIFEST 018361408JJK

0815 - STERICYCLE DEPARTS SITE ^{ww}

0850 - ERES BEGINS CLEARING SITE OF
VEGETATION USING A BRUSH-HOG
ATTACHMENT TO A SKID STEER.

1000 - EMERALD ARRIVES ONSITE FOR MORE
TRANSFORMER DRAINING ^{ww}

1020 - EMERALD BEGINS DRAINING FROM TRANS-
FORMER SN# 20586-2 (SAME AS
MONDAY). ^{ww}

1100 - EMERALD DEPARTS SITE W/ FIRST

* TAD # 0010001-0001000 *

Rite in the Rain

9/19/18

WARREN STEEL (OPR) WEDNESDAY

HAUL-OUT OF TODAY. 18,750 KILOGRAMS OF ≤ 50 PPM PCB OIL VACUUMED FROM TRANSFORMER SN# 20586-2 UNDER B.O.L. 867586. ——— WW

1500 - EMERALD RETURNS ONSITE TO CONTINUE DRAINING TRANSFORMERS ——— WW

1515 - EMERALD BEGINS TO DRAIN TRANSFORMER SN# 20586-1: ESTIMATED 12,250 GALLONS OF ND OIL

1610 - EMERALD DEPARTS WITH SECOND LOAD: 18,750 KILOGRAMS OF NON-DETECT PCB TRANSFORMER OIL UNDER BOL: 867587. ——— WW

1710 - FINISHED FOR THE DAY. DEPART — WW

WW
9/19/18

9/20/18

WARREN STEEL (OPR)

THURSDAY

9

0730 - START WILLIAMS ONSITE, ERCS, EPA AND EMERALD ALREADY ONSITE. EMERALD HAS THREE EMPLOYEES ONSITE TO BEGIN DISMANTLING THE TRANSFORMERS. ALSO CONTINUE TO DRAIN TRANSFORMERS

WEATHER: 54-80°F; RH 96%; WIND WSW @ 0 MPH, 0% CHANCE OF RAIN; 30.01" Hg, MOSTLY SUNNY ——— WW

0800 - EMERALD BEGINS DISMANTLING TRANSFORMERS IN THE FRANKLIN SUB POWER STATION - SOUTH OF N. RIVER ROAD. START WILLIAMS BEGINS MARKING ALL TRANSFORMERS W/ TC-#, SN#, & PCB RESULT, FOR BETTER IDENTIFICATION DURING HAUL OUT. LABELED/MARKED ALL TRANSFORMERS, INCLUDING THE FEW IN THE SCRAP YARD TO THE EAST OF FRANKLIN SUB STATION.

1200 - EMERALD BEGINS DISMANTLING CAPACITORS IN FRANKLIN STATION.

1345 - EMERALD TANK TRUCK ONSITE. BEGINS DRAINING TRANSFORMER 20586-1. ——— WW

1510 - EMERALD OFFSITE. DRAINED (OVER)

Rite in the Rain

9/20/18 WARREN STEEL (OPA) THURSDAY
(N.D.) 18,200 KILOGRAMS FROM TRANSFORMER
20536-1 UNDER B.O.L. 867588.
1530 - TORNADO WARNING! EARLY SHUTDOWN
FOR THE DAY — WW
1545 - START WILLIAMS OFFSITE — WW

WW
9/20/18

9/21/18 WARREN STEEL (OPA) MONDAY¹¹
0720 - START WILLIAMS ONSITE, EMERALD &
EDS ONSITE. EDS ESCORTED EMERALD
TO FRANKLIN SUB STATION TO DRAIN
TRANSFORMERS & CONTINUE TO DIS-
ASSEMBLE CAPACITORS & BEGIN TO
DISMANTLE TRANSFORMERS — WW
WEATHER: 59°-70°F; RH 91%; WIND:
WNW @ 5-10 MPH, 90% CHANCE OF RAIN
BACKNOTE - FRIDAY 9/21/18, EMERALD
CONTINUED DISMANTLING CAPACITORS
& DRAINED TRANSFORMERS: TC-5,
TC-362, TC-363, & TC-364 FOR
A TOTAL OF 5,500 GALLONS/18,750
KILOGRAMS, WHICH WERE TRANSPORTED
OFFSITE UNDER B.O.L. 867594.
0750 - EMERALD BEGINS DRAINING TRANSFORMER
TC-367, TC-365, TC-404, TC-31,
TC-9, TC-429, TC-909, TC-906,
& TC-901. B.O.L. 867593 → 10333 KNO
0900 - EMERALD BEGINS DISMANTLING TRANS-
FORMERS TC-(6, 7, 8, 15, 16, 17,
18, 13, & 14); ALL THE SMALLER, LIGHTER
TRANSFORMERS. THEY ALSO BEGIN
REMOVING THE ^{OFB} CBIS IN FRANKLIN
SUB STATION. — WW

9/24/18 WARREN STEEL (OPA) MONDAY
1500 - EMERALD RETURNS FROM DRAINING TANK TRUCK, W/A LOW-BOY TRAILER AND STARTS LOADING THE LARGER ^{OCB} C.B.I. TRANSFORMER UNITS. UNITS TC-351, TC-338, TC-350, TC-342, TC-348, TC-352; WHICH LEAVE THE SITE UNDER B.O.L. 867592

1630 - ALL PERSONNEL OFFSITE ——— WW

WW.

9/24/18

9/25/18 WARREN STEEL (OPA) TUESDAY 13
0700 - START WILLIAMS ONSITE, EPA & ESD ONSITE. SCOPE TODAY IS TO CONTINUE DISMANTLING ^{OCB} C.B.I.'S IN FRANKLIN SUB & REMOVING THEM, WHILE ALSO DRAINING TRANSFORMERS ON WARREN STEEL PROPERTY (CERCLA)
WEATHER: 62°-74°F, RH: 96%, WIND SSW @ 5-10 MPH, 50% CHANCE OF RAIN.
0715 - EMERALD ARRIVES ONSITE ——— WW
0740 - EMERALD BEGINS CONTINUATION OF ^{OCB} C.B.I. TRANSFORMER DISMANTLING.
1130 - EMERALD LOW-BOY TRAILER ARRIVES ONSITE. ^{OCB} C.B.I. TRANSFORMERS: TC-341, TC-343, TC-344, TC-345, & TC-349 ARE LOADED ONTO THE TRAILER & HAULED OUT UNDER B.O.L. 867596 ——— WW
1315 - EMERALD DEPARTS W/ TRANSFORMERS.
1615 - EMERALD ARRIVES ONSITE W/ LOW-BOY TRAILER TO REMOVE MORE ^{OCB} C.B.I. TRANSFORMERS; LOADED ^{OCB} C.B.I. TRANSFORMERS: TC- (422, 424, 425, & 427) & TRANSFORMERS TC-3 & TC-404
1720 - EMERALD DEPARTS W/ LOAD OF TRANSFORMERS UNDER B.O.L. 867591.
1740 - ALL PERSONNEL OFFSITE ——— WW
Rite in the Rain.

9/26/18 WARREN STEEL (OPA) WEDNESDAY
0710 - START WILLIAMS ONSITE, ERBS & EMERALD
ONSITE. EMERALD WILL CONTINUE TO
DISMANTLE, LOAD, & HAUL OUT CBI &
TRANSFORMERS TODAY ——— WW

~WEATHER: 70°-71°F; RH: 93%; WIND: NNW
@ 5-10 MPH; 80% CHANCE OF RAIN.

0730 EMERALD BEGINS WORK @ FRANKLIN SUB-
STATION, DISMANTLING TRANSFORMERS.
* CORRECTION - EMERALD IS DISMANTLING
CAPACITORS ——— WW

1430 LOW-BUY TRAILER ARRIVES ^{OCB} CBI TRANS-
FORMERS TC - (346, 347, 421, 426,
& 428) & TRANSFORMERS TC - (15,
16, 17, & 18) ARE HAULED AWAY UNDER
B.O.L. 867321. ——— WW

1530 ALL PERSONNEL OFFSITE. ——— WW

WW
9/26/18

9/27/18 WARREN STEEL (OPA) THURSDAY 15
0700 - START WILLIAMS ONSITE, ERBS ONSITE.
DISCUSSED SCOPE OF WORK FOR TODAY.

0715 - EPA & EMERALD ONSITE. EMERALD WILL
DISASSEMBLE TRANSFORMERS IN FRANKLIN
SUB STATION & READY THEM FOR HAUL OUT.

~WEATHER: 49°-66°F; RH: 93%; WIND: NNE
@ 0-5 MPH; 20% CHANCE OF RAIN.

0730 - EMERALD BEGINS DISMANTLING TRANS-
FORMERS TC - (362, 363, 364, 365)

0930 LOW-BUY TRAILER ARRIVES @ FRANKLIN
SUB STATION. LOADS OCB TC - 423,
& TRANSFORMERS TC - (13, 14, 19,
20, 21, 24, 25, 26, 362, 363, 364,
& 365) & HAULES ALL AWAY UNDER
B.O.L. 867322. ——— WW

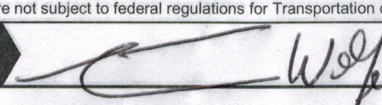
1045 - EMERALD DEPARTS FRANKLIN SUB
STATION ——— WW

1430 LOW-BUY TRAILER RETURNS FOR A
SECOND LOAD OF TRANSFORMERS.
EMERALD BRINGS TC - (6, 7, 8, & 28)
TO WSH. LOW-BUY TRAILER DEPARTS
WITH BUSINESSES & CAPACITORS ——— WW

1600 - ALL PERSONNEL OFFSITE. ——— WW

WW 9/27/18

APPENDIX D
DISPOSAL DOCUMENTATION

BILL OF LADING/MANIFEST		1. Shipper's US EPA ID No. (If Applicable) OHR000007773	Document No. 01681	2. Page 1 of 1
3. Shipper's Name and Mailing Address US EPA Region 5/Warren Steel Site 4000 Mahoning Ave WARREN OH 44483-0000				
4. Shipper's Phone 440-250-1718				
5. Transporter 1 Company Name SAFETY-KLEEN SYSTEMS INC	6. US EPA ID Number TXR0000081205	A. Transporter's Phone 972-265-2000		
7. Transporter 2 Company Name	8. US EPA ID Number	B. Transporter's Phone		
9. Designated Facility Name and Site Address KOH SAFETY-KLEEN SYSTEMS INC 354 PORTAGE BLVD KENT, OH 44240	10. US EPA ID Number OHD981099401	C. Facility's Phone 330-673-3340		
11. Shipping Name and Description		12. Containers	13. Total	14. Unit
HM		No.	Quantity	Wt/Vol
a.	NONE, NON DOT REGULATED. (WASTE OIL, WATER, DIETHEYLENE GLYCOL), N/A	001 TT	03000	G
b.				
c.				
d.				
15. Special Handling Instruction and Additional Information SK SHIP# 226350800 US31527 24H EMERGENCY#800-468-1760-CH/SK/TFI-Contract retained by generator company on initial transporter to add or substitute additional transporters on generator DOT/PRFL A. 8395134/1686403 B. C. D. A) NONE B) C) D)				
16a. US DOT HAZARDOUS MATERIALS SHIPPER'S CERTIFICATION: *This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.				
Printed/Typed Name		Signature required here if US DOT regulated		Month Day Year
16b. NON-REGULATED SHIPPER'S CERTIFICATION: I certify the materials described above on this form are not subject to federal regulations for Transportation or Disposal.				
Printed/Typed Name		Sign here if material is not DOT regulated		Month Day Year
STEPHAN WOLFE USEPA OSC				8 27 18
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		
Printed/Typed Name		Month Day Year		
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		
Printed/Typed Name		Month Day Year		
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of materials covered by this form except as noted in Item 19.				
Printed/Typed Name		Signature		
		Month Day Year		

TANKER 410 1st LOAD

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-1

DOCUMENT NO. **867583**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald Transformer VEHICLE ID # 410 T
EPA ID # FLR000048820 TRANS. 1 PHONE _____
TRANSPORTER 2 _____ VEHICLE ID # _____
EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY			SHIPPER		
FACILITY EPA ID # <u>Emerald Transformer PPM, LLC</u>			SHIPPER EPA ID # <u>Warren Steel</u>		
ADDRESS			ADDRESS		
<u>1672 E. Highland Rd</u>			<u>4000 Mahoning Ave.</u>		
CITY			CITY		
<u>Twinsburg, OH 44087</u>			<u>Warren, OH 44483</u>		
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>18750</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS					
<u>3-49 AM (16 PM) FROM MCGRAW HILLSON SP# 20386-2 2500 GMS = 41.150 LBS = 18750 K</u> <u>ASD 09-17-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen A. W/18 USE 22</u>	SIGN <u>[Signature]</u>	DATE <u>11/17/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr</u>	SIGN <u>[Signature]</u>	DATE <u>09-17-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-2DOCUMENT NO. **867584****STRAIGHT BILL OF LADING**TRANSPORTER 1 Emerald TransformerVEHICLE ID # 3172EPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID # _____			SHIPPER EPA ID # <u>OHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>		STATE	ZIP	CITY <u>Warren, OH 44483</u>	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>18750</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS: <u>NON DETECT. OIL. 5500 GMS. 41,250 LBS / 18750 K</u>					

MR. GARY EDISON
INC-153975-1 *010 9-18-18*

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen W. Potts, Jr.</u> <i>USE EPA</i>	SIGN <u>[Signature]</u>	DATE <u>7/12/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>09-18-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

4

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-3DOCUMENT NO. **867585**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 3172EPA ID # FLR00048820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID # _____			SHIPPER EPA ID # <u>QHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>	STATE <u>OH</u>	ZIP <u>44087</u>	CITY <u>Warren, OH</u>	STATE <u>OH</u>	ZIP <u>44483</u>
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>18750</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>3RD LOAD (2nd for today)</u> <u>ONE - NON DETECT</u> <u>-X McGraw-Hill 9/11 C-2814-5-1</u> <u>0.50 9-18-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen W D R</u> <u>USEPA OSC</u>	SIGN <u>[Signature]</u>	DATE <u>9-18-18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>09-18-18</u>
TRANSPORTER 2	PRINT _____	SIGN _____	DATE _____
RECEIVED BY	PRINT _____	SIGN _____	DATE _____

4

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. 625-4DOCUMENT NO. **867586**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 413 TEPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY Emerald Transformer PFM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID #			SHIPPER EPA ID # OHR000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44087		STATE OH	ZIP 44087	CITY Warren, OH 44483	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
01	TT		A. Non DOT regulated Material (mineral oil)	18750	K
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS 5500 GALS. 250 OIL - 18750K TANK S/N 20596-2 (McGraw-Hill DESIGN) 4TH COMB OSD 9-19-18					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT Stephen Wolfe	USEPA OSC	SIGN 	DATE 9/19/18
TRANSPORTER 1	PRINT Harold W. Potts, Jr.		SIGN 	DATE 09-19-18
TRANSPORTER 2	PRINT		SIGN	DATE
RECEIVED BY	PRINT		SIGN	DATE

4

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-5

DOCUMENT NO. **867587**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald Transformer

VEHICLE ID # 3172

EPA ID # ELR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID # _____			SHIPPER EPA ID # <u>OHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>	STATE	ZIP	CITY <u>Warren, OH 44483</u>	STATE	ZIP

CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>001</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>18750</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		

SPECIAL HANDLING INSTRUCTIONS None on this DOT
FROM Mc Graw Hill 5/11 30586-1 02.0. 09-19-18

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER <u>Stephen W. Orr</u> <u>USE</u> <u>OSL</u>	SIGN <u>[Signature]</u>	DATE <u>9/19/18</u>
TRANSPORTER 1 <u>Arnold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>9-18</u>
TRANSPORTER 2 _____	SIGN _____	DATE _____
RECEIVED BY _____	SIGN _____	DATE _____

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-6DOCUMENT NO. **867588**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 413 TEPA ID # ELR00016820

TRANS. 1 PHONE

TRANSPORTER 2

VEHICLE ID #

EPA ID #

TRANS. 2 PHONE

DESIGNATED FACILITY Emerald Transformer PPM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID #			SHIPPER EPA ID # OHR000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44087	STATE	ZIP	CITY Warren, OH 44483	STATE	ZIP
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. Non DOT regulated Material (mineral oil)	<u>18250</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>Back ok from S/N 20586-1</u> <u>ABN DETECT</u> <u>DSA 9-20-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Wolke US EPA</u>	SIGN <u>[Signature]</u>	DATE <u>9/20/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>09-20-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

3

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-7

DOCUMENT NO. **867594**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald Transformer VEHICLE ID # 255036T
 EPA ID # FLR00014820 TRANS. 1 PHONE _____
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>				SHIPPER <u>Warren Steel</u>	
FACILITY EPA ID #				SHIPPER EPA ID # <u>OHR000007773</u>	
ADDRESS <u>1672 E. Highland Rd</u>				ADDRESS <u>4000 Mahoning Ave.</u>	
CITY <u>Twinsburg, OH 44087</u>		STATE		CITY <u>Warren, OH 44483</u>	
ZIP		STATE		ZIP	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>18750</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>SOLE OIL 450 PPM 5500GALS.</u> <u>MISC EQUIP</u> <u>050 - 09-21-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Wair</u>	SIGN <u>[Signature]</u>	DATE <u>9/21/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>09-21-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-8DOCUMENT NO. **867593**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 410 TEPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID # _____			SHIPPER EPA ID # <u>OHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>	STATE	ZIP	CITY <u>Warren, OH 44483</u>	STATE	ZIP
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>TT</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>10333</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS (TC 365) <u>SN 5618201 250 GALS</u> <u>DATE OR - ND</u> <u>OB (TC 365) SN 308420 (Phase 2) 1140 GALS</u> <u>TC 404 SN PPH-0626 512 GALS</u> <u>SN 3054717 528 GALS</u> <u>SN PPH-0621 289 GALS</u> <u>SN 404A 3654-203 265 GALS</u> <u>TC 904-9060-9061-1006-05</u> <u>314 GALS = 10333 K</u> <u>03.0 07-24-18</u>					

SHIPPER'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Wolfe</u>	USEPA <u>USEPA</u>	SIGN <u>[Signature]</u>	DATE <u>7/24/18</u>
TRANSPORTER 1	PRINT <u>Harold W Potts, Jr.</u>		SIGN <u>[Signature]</u>	DATE <u>07-24-18</u>
TRANSPORTER 2	PRINT _____		SIGN _____	DATE _____
RECEIVED BY	PRINT _____		SIGN _____	DATE _____

4

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-9

DOCUMENT NO. **867592**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald Transformer VEHICLE ID # 3204
 EPA ID # FLR00016820 TRANS. 1 PHONE _____
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID #			SHIPPER EPA ID # <u>OHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>	STATE	ZIP	CITY <u>Warren, OH 44483</u>	STATE	ZIP
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>06</u>	<u>EM</u> <u>HWP</u>		A. <u>Non DOT regulated Material (mineral oil)</u> <u>MR. GLENN EDWARDS</u> <u>HWP</u>	<u>7197</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>CCBS</u> <u>OSD</u> <u>OP-24-18</u> <u>SEE CONTINUATION SHEET FOR UNIQUE ID #s.</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER <u>Stephen Wolfe</u> <u>US/PA-JSC</u>	PRINT	SIGN <u>[Signature]</u>	DATE <u>9/24/18</u>
TRANSPORTER 1 <u>Harold W. Potts, Jr.</u>	PRINT	SIGN <u>[Signature]</u>	DATE <u>09-24-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

4

6-17

MANIFEST# 867592 BOL#

****THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES****

GENERATOR:

[illegible]

UNIT TYPES:

DM = DRUM METAL

MATERIAL DESCRIPTION:

A-SWITCH, OCB, etc

TRANSFORMER TYPE;

POLE

DF = DRUM FIBER CM=CONTAINER METAL

CW=CONTAINER WOOD

B=BUSHING

C=CAPACITOR D=DEBRIS

$$O=OIL$$

T=TRANSFORMER

PAD

SUBSTATION

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. 1NS-10

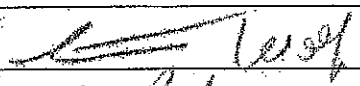
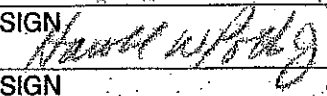
DOCUMENT NO. **867596**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald Transformer VEHICLE ID # 3204
 EPA ID # FLR00016820 TRANS. 1 PHONE _____
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>				SHIPPER <u>Warren Steel</u>	
FACILITY EPA ID # _____				SHIPPER EPA ID # <u>OH R000007773</u>	
ADDRESS <u>1672 E. Highland Rd</u>				ADDRESS <u>4000 Mahoning Ave.</u>	
CITY <u>Twinsburg, OH 44087</u>		STATE <u>OH</u>		ZIP <u>44083</u>	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>05</u>	<u>CM</u>		A. <u>Non DOT regulated Material (mineral oil)</u>	<u>8643</u>	<u>K</u>
<u>01</u>	<u>CM</u>		B. <u>NON DOT REGULATED MATERIAL (mineral oil)</u>	<u>1136</u>	<u>K</u>
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>(5) OCS (1) TRANSFORMER</u> <u>SEE CONTINUATION SHEET FOR DANGEROUS ID'S & OSG 09-25-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Walter</u> <u>USC</u>	SIGN 	DATE <u>7/25/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN 	DATE <u>07-25-18</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

50015
8634 K

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-10DOCUMENT NO. **867591****STRAIGHT BILL OF LADING**TRANSPORTER 1 Emerald TransformerVEHICLE ID # 3604EPA ID # FLR00010320

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Emerald Transformer PPM, LLC</u>			SHIPPER <u>Warren Steel</u>		
FACILITY EPA ID # _____			SHIPPER EPA ID # <u>QHR000007773</u>		
ADDRESS <u>1672 E. Highland Rd.</u>			ADDRESS <u>4000 Mahoning Ave.</u>		
CITY <u>Twinsburg, OH 44087</u>		STATE <u>OH</u>	ZIP <u>44087</u>	CITY <u>Warren, OH 44483</u>	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>2</u>	<u>TCM</u>		A. <u>Transformer</u> Non DOT regulated Material (mineral oil)	<u>19742</u>	<u>lbs</u>
<u>4</u>	<u>CM</u>		B. <u>NonDOT Regulated Material</u> <u>Breakers</u>	<u>14070</u>	<u>lbs</u>
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stefan Wolf</u>	U.S. EPA <u>USEPA</u>	SIGN <u>[Signature]</u>	DATE <u>9-25-18</u>
TRANSPORTER 1	PRINT <u>Alex Caulder</u>		SIGN <u>[Signature]</u>	DATE <u>9-25-18</u>
TRANSPORTER 2	PRINT _____		SIGN _____	DATE _____
RECEIVED BY	PRINT _____		SIGN _____	DATE _____

4

****Each unit Must Be Marked on Sheet With All corresponding information Filled in****

THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES

Pg. 1 of 1

[illegible]

UNIT TYPES:

DM = DRUM METAL

MATERIAL DESCRIPTION:

A-SWITCH, OCB, etc

TRANSFORMER TYPE:

POLE

DF = DRUM FIBER CM=CONTAINER METAL

CW=CONTAINER WOOD

B=BUSHING

C=CAPACITOR D=DEBRIS

$$O=O$$

T=TRANSFORMER

PAD

SUBSTATION

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-91DOCUMENT NO. **867595**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 413 TEPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY Emerald Transformer PPM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID # _____			SHIPPER EPA ID # OHR000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44087		STATE OH	ZIP 44087	CITY Warren, OH 44483	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>01</u>	<u>CM-TT</u> <u>TRUP</u>		A. Non DOT regulated Material (mineral oil)	<u>19096</u>	<u>K</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>BULK OIL = 5765 GALS</u> <u>TC-29 INH 11/22/17 1510 GALS TC-20 10/16/21 1485 GALS</u> <u>TC-17 INH 11/18/17 2230 GALS</u> <u>RD 09-26-18</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Wolfe</u> <u>USEPA</u> <u>OSL</u>	SIGN <u>[Signature]</u>	DATE <u>9/26/18</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>09-26-18</u>
TRANSPORTER 2	PRINT _____	SIGN _____	DATE _____
RECEIVED BY	PRINT _____	SIGN _____	DATE _____

4

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-13DOCUMENT NO. **867321****STRAIGHT BILL OF LADING**TRANSPORTER 1 Emerald Transformer

VEHICLE ID #

3204EPA ID # FLR00016820

TRANS. 1 PHONE

TRANSPORTER 2

VEHICLE ID #

EPA ID #

TRANS. 2 PHONE

DESIGNATED FACILITY Emerald Transformer PPM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID #			SHIPPER EPA ID # OH R000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44087	STATE	ZIP	CITY Warren, OH 44483	STATE	ZIP
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>09</u>	<u>CM</u>		A. Non DOT regulated Material (mineral oil)	<u>9255</u>	<u>K</u>
<u>02</u>	<u>DM</u>		B. NON DOT REGULATED MATERIAL (LUBRICANT OIL)	<u>191</u>	<u>K</u>
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>SEE CONTINUATION SHEET FOR UNIFORM ID #S.</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Stephen Wolfe</u>	SIGN <u>[Signature]</u>	DATE <u>9/26/13</u>
TRANSPORTER 1	PRINT <u>Harold W. Potts, Jr.</u>	SIGN <u>[Signature]</u>	DATE <u>08-26-13</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

W-13

THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES

MANIFEST# 867324

<u>UNIT TYPES:</u>	<u>TRANSFORMER TYPE:</u>	<u>MATERIAL DESCRIPTION:</u>
DM = DRUM METAL	B=BUSHING	POLY
	C =CAPACITOR	DF = DRUM FIBER
	D=DEBRIS	CM=CONTAINER
	O=OIL	METAL
	T =TRANSFORMER	CW= CONTAINER WOOD
	PAD	
	SUBSTATION	

A-SWITCH, OCB, etc

CW= CONTAINER WOOD

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-14DOCUMENT NO. **867322**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 3204EPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY Emerald Transformer PPM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID #			SHIPPER EPA ID # OHR000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44097	STATE	ZIP	CITY Warren, OH 44483	STATE	ZIP
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
13	CM		A. Non DOT regulated Material (mineral oil)	124.5	K
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <i>SEE CONTINUATION FOR UNIQUE ID #'S</i> <i>OSD - 09-27-18</i>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <i>Stephen White</i> <i>USE PP 33C</i>	SIGN <i>[Signature]</i>	DATE <i>9/27/18</i>
TRANSPORTER 1	PRINT <i>Harold W. Porter, Jr.</i>	SIGN <i>[Signature]</i>	DATE <i>09-27-18</i>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

4

MANIFEST# 102701

228 282

MANIFEST I#

B=BUSHING	T=TRANSFORMER
C=CAPACITOR	D=DEBRIS
O=OIL	PAD
	SUBSTATION

DM = DRUM METAL POLE

:DF:= DRUM FIBER CM=CONTAINER METAL

CW=CONTAINER WOOD

Site Address:

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-15DOCUMENT NO. **867323**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Emerald TransformerVEHICLE ID # 3204EPA ID # FLR00016820

TRANS. 1 PHONE _____

TRANSPORTER 2 _____

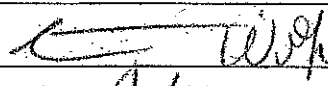
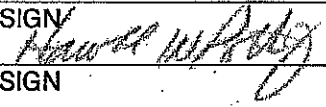
VEHICLE ID # _____

EPA ID # _____

TRANS. 2 PHONE _____

DESIGNATED FACILITY Emerald Transformer PPM, LLC			SHIPPER Warren Steel		
FACILITY EPA ID #			SHIPPER EPA ID # OHR000007773		
ADDRESS 1672 E. Highland Rd			ADDRESS 4000 Mahoning Ave.		
CITY Twinsburg, OH 44087		STATE	ZIP	CITY Warren, OH 44483	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
253	CM		A. Non DOT regulated Material (mineral oil)	6900	K
6	CM		B. NON DOT REGULATED MATERIAL	1364	K
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS					
A - CAPACITORS B - BURNINGS O.S.D. 09-27-18					
SEE CONFINEMENT TABLE FOR UNIQUE ID #S.					

SHIPPER'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT Stephen Wolfe	USEPA OSL	SIGN 	DATE 9/27/18
TRANSPORTER 1	PRINT Harold W. Potts, Jr.		SIGN 	DATE 09-27-18
TRANSPORTER 2	PRINT		SIGN	DATE
RECEIVED BY	PRINT		SIGN	DATE

4

THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES

~~MANIFEST#~~ Doc #

067323

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UNIT TYPES:	TRANSFORMER TYPE:	B=BUSHING C=CAPACITOR D=DEBRIS O=OIL	T=TRANSFORMER PAD SUBSTATION
DM = DRUM METAL	POLE		
MATERIAL DESCRIPTION:	DF = DRUM FIBER CM=CONTAINER METAL CW=CONTAINER WOOD		
A-SWITCH, OCB, etc			

APPENDIX E
ENVIRONMENTALLY-PREFERRED PRACTICES

TDD #:	S05-0004-1807-203
Site Name:	Warren Steel Holdings
Site City, State:	Warren, Ohio
Site Project Manager:	Jackie Cole
EPA OSC:	Stephen Wolfe

Environmentally Preferred General Field Practices				
If a general category is not applicable, then check N/A for the category box, not for each subcategory.	N= Not Used	N/A= Not Applicable	Y = Yes Implemented	Comments Section Justify in the comments for each BMP field as to why the practice was not used, not applicable, or implemented.
Energy				
Use of Energy Efficient Equipment				
Computer Equipment (FEMP/Energy Star)			X	Energy Star laptops were utilized
Installation of Electric Service		X		U.S. Environmental Protection Agency (EPA) ERRS contractor responsible for on-site electricity.
Reduce Carbon Emissions from Transportation				
Use Internet Based Meetings/Conferences			X	Communicated through emails or phone conferences for project communication, as able.
Maximize Carpooling		X		Only one Tetra Tech employee on-site at a time, carpooling not applicable.
Use of Local Labor/Suppliers/Waste Disposal Facilities (50 mile radius)		X		U.S. Environmental Protection Agency (EPA) ERRS contractor responsible for labor, supplies, and waste disposal.
No idling, except for extreme weather conditions			X	Idling was not used, barring extreme weather conditions.
Use of Alternative Fuels, if available within 10 miles	X			Gas stations in the area did not have alternative fuels available.
Properly Inflated Tires			X	Tires were kept inflated and monitored for pressure.
Email Small Files (less than 8MB)			X	Small files were emailed.
Reusable Electronic Storage Media or the Cloud			X	A electronic storage media device was used for file storage and communication.
Water				
Use of Low Flow Sampling Pumps		X		Not necessary for scope of work.
Waste				
Use of Local Recycling Programs			X	Recycling programs utilized through ERRS contractor.

Environmentally Preferred General Field Practices				
If a general category is not applicable, then check N/A for the category box, not for each subcategory.	N = Not Used	N/A = Not Applicable	Y = Yes Implemented	Comments Section Justify in the comments for each BMP field as to why the practice was not used, not applicable, or implemented.
Use of Rechargeable Batteries			X	Rechargeable batteries were used for PDR-1500 particulate monitoring.
Recycling – Other		X		Not applicable for scope of work.
Plastic Reduction			X	Plastic use was kept to a minimum.
Reuse of Resources		X		Not applicable for scope of work.
Direct Push Boring		X		Not applicable for scope of work.
Materials				
Printing when Required				
Double-sided Printing			X	Tetra Tech utilized double-sided printing when printing from the office (on-site printing occurred through ERRS contractor).
100% post-consumer recycled paper			X	Tetra Tech utilized 100% post-consumer recycled paper, as able, when printing from the office.
Land & Ecosystems				
Minimize Disruption to Natural Vegetation		X		Not applicable for scope of work
Use of Non-invasive Investigation Techniques		X		Not applicable for scope of work
Environmentally Preferred				
Green Procurement				
Environmentally Preferred Vendors		X		Not applicable for scope of work
Green Lodging/Hotels			X	Green lodging was utilized, where applicable.
Use of Green Laboratories		X		Not applicable for scope of work; ERRS contractor procured laboratories for project duration.

TDD #:	S05-0004-1807-203
Site Name:	Warren Steel Holdings
Site City, State:	Warren, Ohio
Site Project Manager:	Jackie Cole
EPA OSC:	Stephen Wolfe

Green Metrics		
Metric	Amount	Unit of Measure
Diesel Fuel Used	0	gallons
Distance Traveled ¹	385.00	Miles
Unleaded Fuel Used ²	14.64	gallons
Alternative/E-85 Fuel Used	0	gallons
Electricity from Coal	0	kW
Electricity from Natural Gas	0	kW
Electricity from solar/wind	0	kW
Electricity from grid/mix	0	kW
Solid waste reused	0	lbs
Solid waste recycled	0	lbs
Water Used	0	gallons

Greenhouse Gas Emissions (Site Specific)					
Source	Amount Used	Unit of Measure	Methane (CH ₄) (Grams) ³	Nitrous Oxide (N ₂ O) (Grams) ³	Carbon Dioxide (CO ₂) (Kilograms) ³
Gasoline	14.64	X gallons	2.54	6.28	130.43
Diesel	0.00	X gallons			
E-85	0.00	X gallons			
Electricity Office	0.00	X Kilowatts			
Natural Gas	0.00	X Therms			
Solid Waste	0.00	X lbs			
Other	0.00	X Unit of Measure			

Note:

¹ Distance traveled based on number of trips between the Warren Steel Holdings site in Warren, Ohio and Tetra Tech's Cleveland and Detroit Offices (110 and 500 round-trip miles, respectively) in a mid-size or large sport utility vehicle, which was required for site conditions. A total of 38 trips were made by 1 Tetra Tech personnel totaling 4,460 miles.

² Fuel consumption based on distance traveled in a large sport utility vehicle. An average fuel efficiency of 27.3 miles per gallon was assumed based on 2015 light duty truck fuel efficiency from "Average Fuel Efficiency of U.S. Light Duty Vehicles," U.S. Department of Transportation, Bureau of Statistics Table 4-23 (Accessed online at <https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-and-data/national-transportation-statistics/217651/ntsntire2017q4.pdf> on October 4, 2018).

³ Methane and nitrous oxide emissions based on emission factors of 0.0066 and 0.0163 grams per mile for EPA Tier 2 light duty gasoline trucks from "Voluntary Reporting of Greenhouse Gases Program, Fuel Emission Coefficients, Table 5" (Accessed online at <http://205.254.135.7/oiaf/1605/coefficients.html> on December 9, 2016)

⁴ Carbon dioxide emissions based on emission factors of 8.91 kilograms carbon dioxide per gallon of gasoline and 10.15 kilograms carbon dioxide per gallon of diesel fuel from "Voluntary Reporting of Greenhouse Gases Program, Fuel Emission Coefficients, Table 2" (Accessed online at <http://205.254.135.7/oiaf/1605/coefficients.html> on November 14, 2016).